



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/017,937	02/03/1998	STEPHEN D. JULSTROM	12078US01	9038

7590 11/21/2003

MCANDREWS HELD & MALLOY
500 WEST MADISON STREET
34TH FLOOR
CHICAGO, IL 60661

EXAMINER

PENDLETON, BRIAN T

ART UNIT	PAPER NUMBER
----------	--------------

2644

DATE MAILED: 11/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/017,937

Applicant(s)

JULSTROM ET AL.

Examiner

Brian T. Pendleton

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 128-136, 138-141, 145-153, 155-158, 162-168 and 172-174 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 136, 138-140, 153 and 155-157 is/are allowed.
- 6) ☒ Claim(s) 128-135, 141, 145-152, 158, 162-168 and 172-174 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

The indicated allowability of previous claims is withdrawn in view of the newly discovered reference(s) to Preves et al and Palett et al. Rejections based on the newly cited reference(s) follow.

Claims 136, 138-140, 153, 155-157 are allowed.

Independent claims 136 and 153 recite at least two microphones, signal processing circuitry having two high-pass filters, a differencing circuit that has two gain adjusters for trimming out mid-band amplitude sensitivity differences in the at least two microphones, the microphone and/or signal processing circuitry limiting the adverse effects on the microphone assembly output signal from amplitude and phase mismatches between the microphones. While the closest prior art reference Yamamoto et al teach a directional microphone system comprising two microphones, high pass filters and a summer in figure 13, there is no teaching nor suggestion of gain adjusters for trimming out mid-band amplitude sensitivity differences in the microphones. That feature is novel and not obvious. Claims 136, 153 and their dependents are allowed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 128-135, 145-152, 162-168 and 172-174 rejected under 35 U.S.C. 103(a) as being unpatentable over Preves et al in view of Palett et al . Preves et al disclose a microphone assembly comprising at least two microphones, MIC F and MIC B, signal processing circuitry (inverter 52, adjustable phase delay 54 and adjustable gain 56) and a case 20, whereby the circuitry and/or microphones are configured to compensate for amplitude and phase mismatches (see column 5 lines 14-35). However, the assembly is in a hearing aid, not mounted in an interior surface of a passenger vehicle.

Nevertheless, it would have been obvious to one of ordinary skill in the art at the time of invention to mount the microphones and circuitry in a vehicle since the entire apparatus would have taken advantage of having matched amplitude and phase responses and be more accurate for sound input uses in the delicate environment of the interior of a vehicle. Furthermore, it was well known, as evidenced by Palett et al figure 1, to mount microphones in vehicles which have several locations for acoustical barriers.

Claims 128, 145, and 162 met. Per claims 129, 130, 146, 147, 163, and 164 inherently the apparatus of Preves et al has a sealing gasket. As to claims 131-133, 148-150, 167 168, and 172-174 the molded shell 20 and face plate 22 function as protective screens. Regarding claims 134, 135, 151, 152, 165, and 166, molded shell 20 also functions as a covering.

Claims 141 and 158 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al in view of Palett et al. Yamamoto et al teach a microphone assembly comprising two microphones, high pass filters and a summer. The high pass filters limit adverse effects from amplitude and phase mismatches. Yamamoto et al do

not teach generating an additional output signal having an extended low frequency response in comparison to the output signal from the summer. However, in an alternate embodiment, figure 14, Yamamoto et al disclose generating a directional signal with an extended low frequency response (low pass filter 4a). It would have been obvious to one of ordinary skill in the art at the time of invention to switch between the alternate embodiments for a specific output signal. The embodiment of figure 13 helped prevent noise from occurring the low frequency range, while the embodiment of figure 14 allowed low frequency signals to be produced. Depending on the needs of the user, either output could be useful, therefore one of ordinary skill would have been motivated to provide both in one apparatus. This modification would have incorporated a switch to select between the different outputs, which are generated by two non-patentable configurations and therefore obvious. Additionally, it would have been obvious to one of ordinary skill in the art at the time of invention to mount the apparatus of Yamamoto et al in a vehicle, as shown by Palett et al since it was well known to do so.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (703) 305-9509. The examiner can normally be reached on M-F 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Art Unit: 2644

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



Brian Tyrone Pendleton
November 17, 2003



XU MEI
PRIMARY EXAMINER